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TRAUMA SENSITIVE YOGA (TCTSY) VERSUS GOLD-STANDARD PSYCHOTHERAPY FOR PTSD RELATED TO MILITARY SEXUAL TRAUMA (MST) IN WOMEN VETERANS: FINDINGS AND IMPLICATIONS FOR WHOLE HEALTH

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Disclaimer

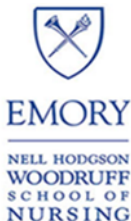
The contents of this presentation do not represent the views of the U.S. Department of Veterans Affairs or the United States Government.

Conflicts of Interest

The authors report no conflicts of interest.



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OBJECTIVES

- Provide brief background and rationale for the study
- Describe study methods (2016-2021)
- Present results related to PTSD and co-occurring depression
- Discuss study implications and next steps
- Discuss relevance to Whole Health, current and future



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THE PROJECT STRESS-LESS TEAM



- Multi-site (Atlanta VAHCS and VA Portland HCS)
- Dave Emerson, TCTSY facilitators, and the Center for Trauma and Embodiment
- Co-Investigators: psychologists, psychiatrist, cardiologist, sleep medicine physician, research scientists
- Numerous staff members, nursing students, psychology students, and volunteers.
- Hundreds of women Veterans who participated in the study and/or provided input and inspiration.



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BACKGROUND

- PTSD rates among military members and Veterans are higher than general population. ¹
- PTSD among women Veterans is most often related to military sexual trauma (MST). ²
- MST is defined as sexual assault or repeated, threatening sexual harassment during military service, regardless of perpetrator.

1. Kessler RC, Berglund P, Demler O, et al. Lifetime Prevalence and Age-of-Onset Distributions of DSM-IV Disorders in the National Comorbidity Survey Replication. Archives of General Psychiatry. 2005-06-01 2005;62(6):593.

2. Wilson LC. The Prevalence of military sexual trauma: A meta-analysis. Trauma Violence Abuse 2018;19:584–597



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SIGNIFICANCE

- VA provides evidence-based PTSD treatment; first line treatments include prolonged exposure (PE) and cognitive processing therapy (CPT).
 - Drop out rates are 30%-40%; majority still meet criteria for PTSD post-tx.¹⁻²
- Use of complementary and integrative health (CIH) interventions in VA has grown significantly with their increased popularity and the expansion of Whole Health.
- This study was designed to address the gap in effective treatment options and the increased use of yoga in the clinical setting for wellness and PTSD.

1. Eftekhari, A., Crowley, J. J., & Rosen, C. S. (2020). Predicting treatment dropout among Veterans receiving prolonged exposure therapy. *Psychological Trauma: Theory, Research, Practice, and Policy*, 12(4), 405–412. <https://doi.org/10.1037/tra0000484>

2. Steenkamp, M. M., Litz, B. T., Hoge, C. W., & Marmar, C. R. (2015). Psychotherapy for military-related PTSD: A review of randomized clinical trials. *JAMA*, 314(5), 489–500. <https://doi.org/10.1001/jama.2015.8370>



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WHY YOGA?

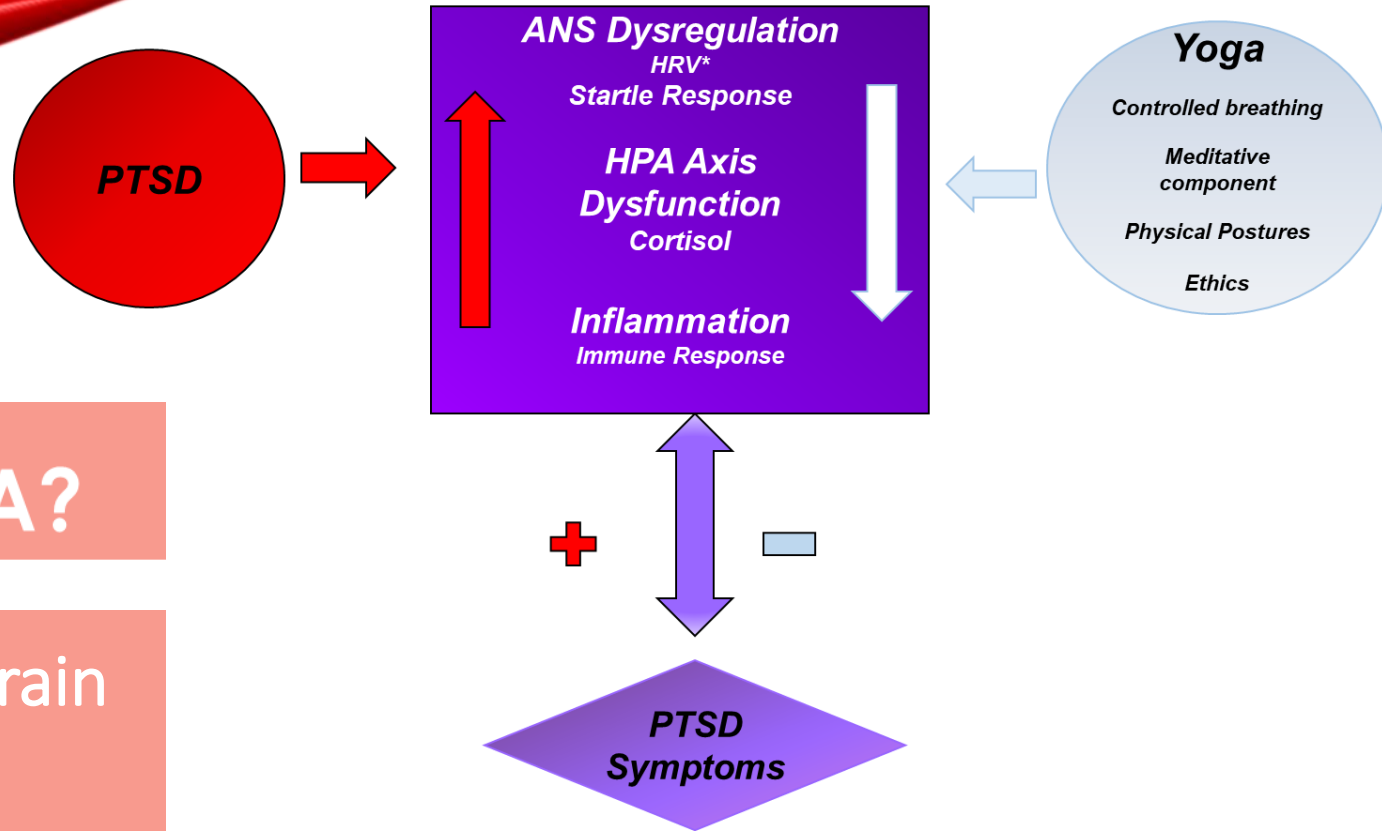
Yoga is
groovy,
who
wouldn't
feel better?



WHY YOGA?

Trauma, the Brain
and Body

Psychoneuro-
immunology
(PNI)

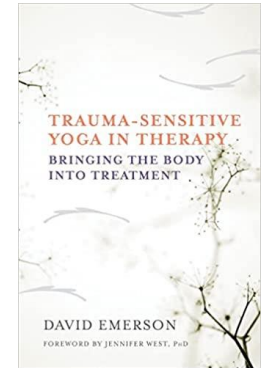
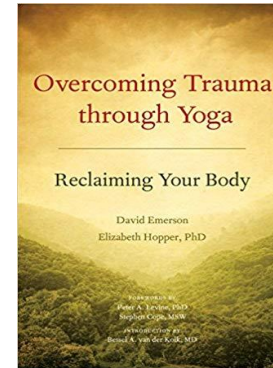


ANS=autonomic nervous system; HPA=hypothalamic-pituitary-adrenal; HRV=heart rate variability

Kelly, U. A., Evans, D. D., Baker, H., & Noggle Taylor, J. (2018).
Determining psychoneuroimmunologic markers of Yoga as an
intervention for persons diagnosed with PTSD: A systematic review.
Biological Research for Nursing, 20(3), 343–351.
<https://doi.org/10.1177/1099800417739152>

WHY TCTSY?

Clinical intervention for complex trauma
or chronic, treatment-resistant PTSD



Themes/Therapeutic Goals of TCTSY

- Interoception (internal experience)
- Non-coercion
- Present moment experience
- Practice making choices
- Taking effective action
- Creating safety within the body

TCTSY is Theory-Driven

- Trauma theory, attachment theory, neuroscience, Hatha yoga
- Trauma happens to the body first
- Body to brain rather than brain to body

Emerson, D. (2015). Trauma-Sensitive Yoga in Therapy: Bringing the Body into Treatment. New York: W.W. Norton and Company, Inc.

Emerson, D., & Hopper, E. (2012). Overcoming trauma through yoga: Reclaiming your body. North Atlantic Books.

STUDY AIMS

To evaluate the effectiveness of Trauma Center Trauma Sensitive Yoga (TCTSY) compared to gold standard psychotherapy (CPT):

Primary Aim 1	in reducing symptoms of PTSD, chronic pain, and insomnia
Primary Aim 2	in improving quality of life and social functioning
Primary Aim 3	on biological (cytokines) and psychophysiological markers (Mechanisms of action of yoga)



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METHODS

- **Design:** initially single-site 4-year RCT; added Portland VAHCS in year 4 with project mod; THEN
 - COVID-19 related shut-downs one month after enrollment started in PDX.
- **Sample:**
 - Women veterans with current PTSD related to MST enrolled at Atlanta or Portland Healthcare System.
 - Atlanta (n=103) (9 cohorts)
 - Portland (n=28) (1 cohort) virtual study procedures and interventions
- **Data Collection:**
 - Timepoints: Baseline, mid-intervention, 2-weeks and 3-months post-intervention
 - Phase 2: invited study participants for quantitative follow up; subset of qualitative interviews
- **Interventions:** group delivery, weekly, in person then virtual during COVID pandemic
- **Data Analysis:** Multilevel linear models (MLM) were used to model the longitudinal measures to compare changes over time between the two groups



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MEASURES

PTSD:

CAPS- 5

PCL-5

TRAUMA:

DRRI-2 Combat Experiences

Childhood Trauma Questionnaire

Life Events Checklist

Sleep and Pain:

Berlin Questionnaire

Epworth Sleepiness Scale

Pittsburgh Sleep Quality Index

Brief Pain Inventory

Mental Health and Quality of Life:

MINI (for DSM-5)

Beck Depression Inventory (BDI)

Difficulties in Emotion Regulation
Scale

Dissociative Experiences Scale

Patient Health Questionnaire

PROMIS Measures

Veterans RAND 12 Item Health Survey

Psychophysiology:

ECG

HRV

Dark-enhanced Startle (Atlanta only)

Cytokines/CRP



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INTERVENTIONS



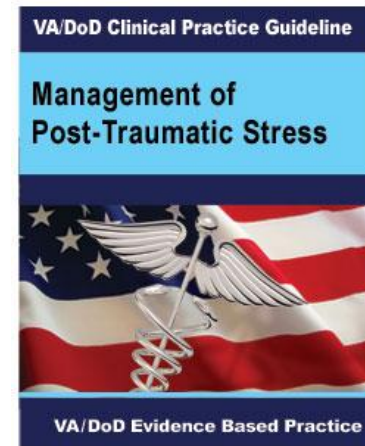
Trauma Center Trauma Sensitive Yoga (TCTSY)

- 10 weeks; 60-minute sessions
- 2 TCTSY certified facilitators
- Hatha Style Yoga
 - Components: physical forms, controlled breathing, mindfulness (interoception)

Trauma Center Trauma Sensitive Yoga,
www.traumasensitivelyoga.com

Cognitive Processing Therapy (CPT)

- 12 weeks; 90-minute sessions
- 2 VA clinicians
 - Certified in CPT
- First line treatment within VA
- CBT-based therapy
 - Talk therapy



<https://www.healthquality.va.gov/guidelines/MH/ptsd/>

RESULTS: SAMPLE DESCRIPTION

Demographics Characteristics by Site

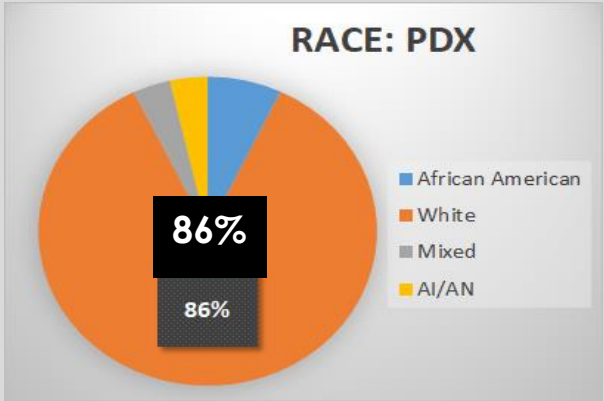
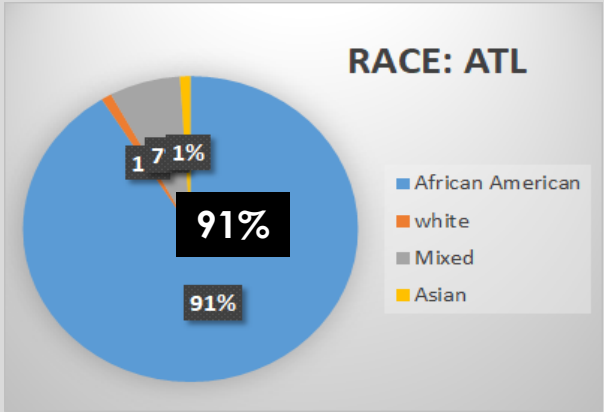
	Pacific Northwest (N=28)	Southeast (N=103)
	<i>Mean (SD)</i>	<i>Mean (SD)</i>
Age	47.5 (11.7)	48.43 (11.2)
Demographic	n (%)	n (%)
Education		
12 years (high school)	2 (7.1)	16 (15.5)
13-16 years (college)	19 (67.9)	80 (77.7)
17-20 years (college)	7 (25)	7 (6.8)
Race		
Black, AA	2 (7.1)	93 (90.3)***
Asian	-	1 (1.0)
White	24 (85.8)***	1 (1.0)
Mixed	1 (3.6)	7 (6.8)
American Indian/Alaska Nat.	1 (3.6)	
Relationship Status		
Non-partnered	15 (53.6)	72 (69.9)
Married/Partnered	13 (46.4)	31 (30.1)
Household Monthly Income		
Less than \$2K/mo	5 (17.9)	44 (43.1)*
\$2K/mo or more	23 (82.1)*	58 (56.9)
Employment		
Less than full-time	21 (75)	71 (68.9)
Full-time	7 (25)	32 (31.1)

*** $p \leq 0.001$

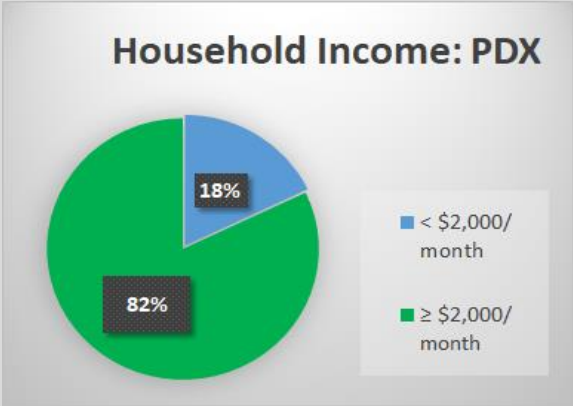
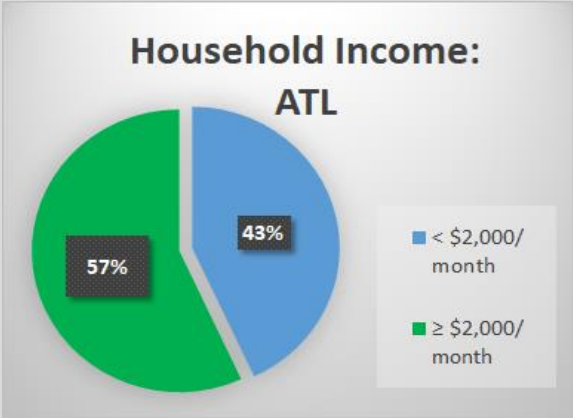
* $p = 0.014$

DEMOGRAPHIC DIFFERENCES BY SITE

RACE

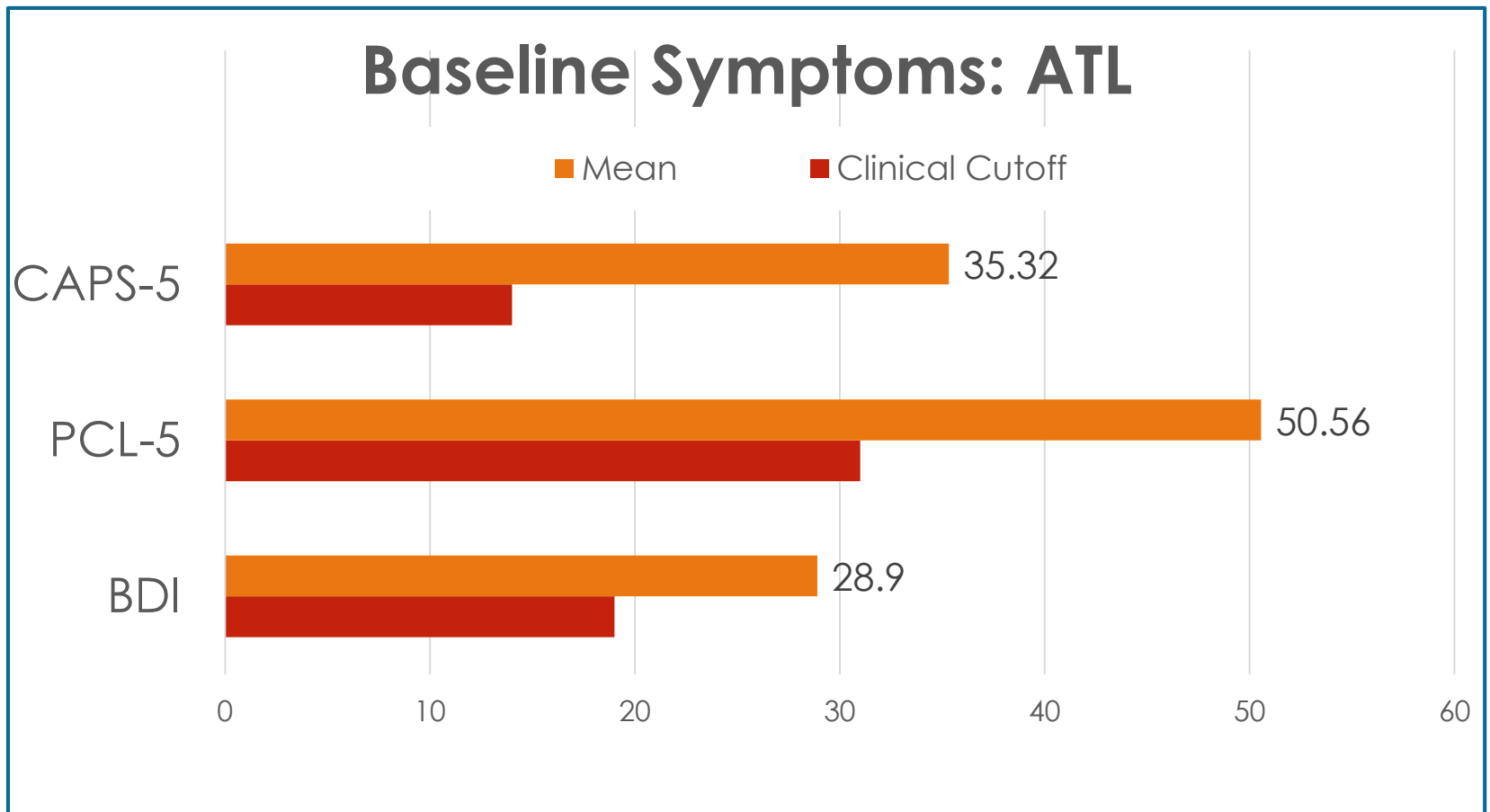


INCOME



72.5% African American women overall

RESULTS: PTSD AND DEPRESSION SYMPTOM SEVERITY

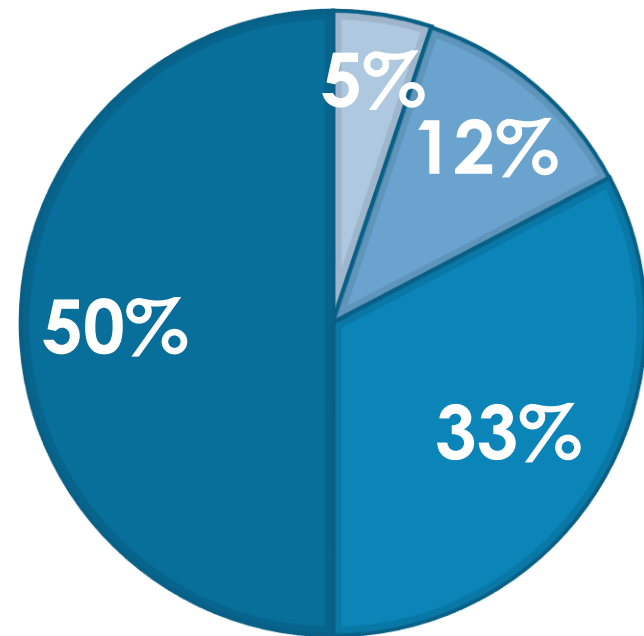


RESULTS: DEPRESSION AND SUICIDALITY

n=103	YES
SUICIDALITY (PAST MONTH)	n=33 32%
Suicide Attempt (Lifetime)	n= 25 24.3%

DEPRESSION SYMPTOMS (BDI)

■ Minimal ■ Mild ■ Moderate ■ Severe



ATTRITION
FROM SCREENING
TO BASELINE VISIT

32%



AFTER RANDOMIZATION PRIOR TO
FIRST INTERVENTION SESSION (ATL)



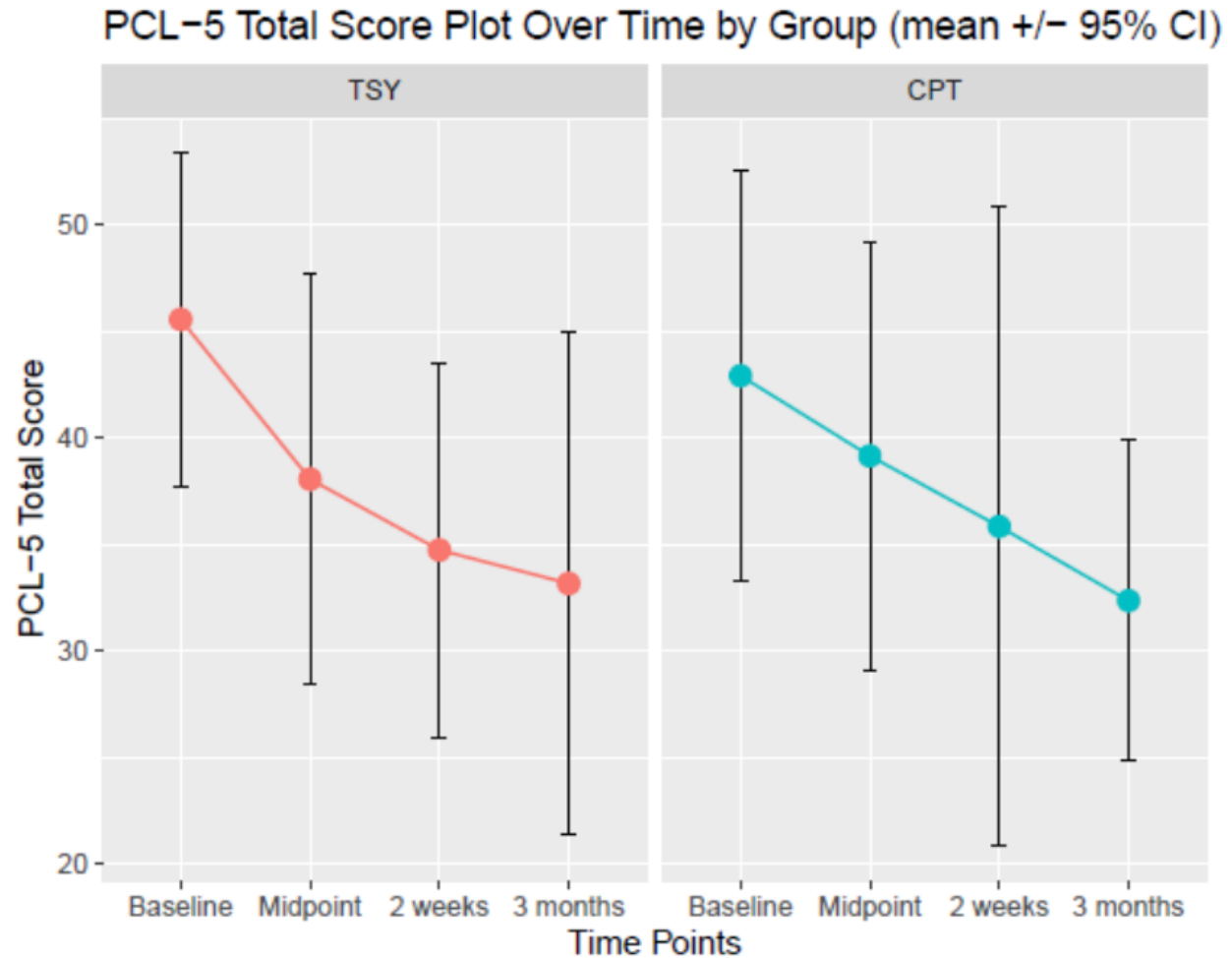
TCTSY: 10%
CPT: 20%



PTSD SYMPTOMS (PCL-5)



- Time is significant ($p < .001$)
 - Both groups significantly decreased over time
- No group effect
(no difference between groups at end of study)

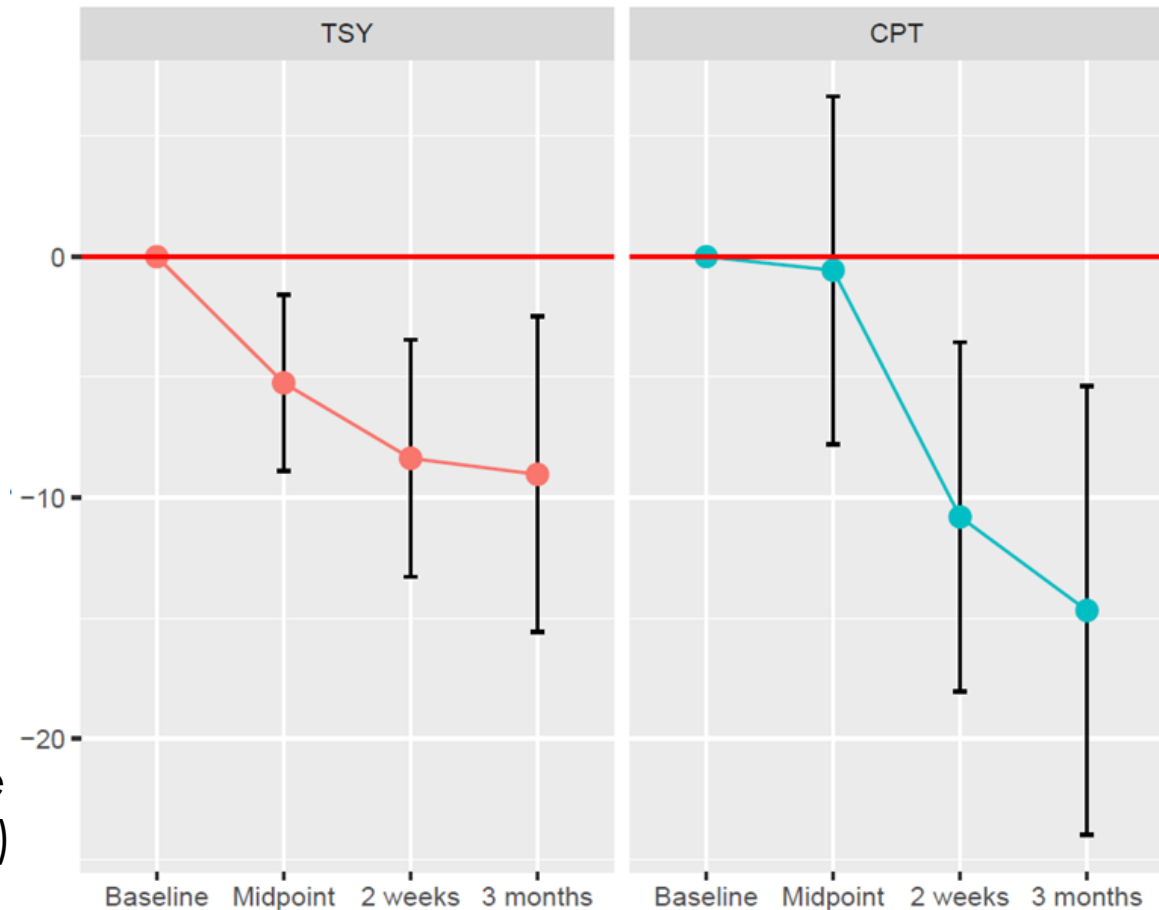


PTSD SYMPTOMS (PCL-5) CHANGE SCORES



Effect sizes (Cohen's d) were large for TCTSY ($d = 1.10$ – 1.18) and CPT ($d = 0.90$ – 1.40).

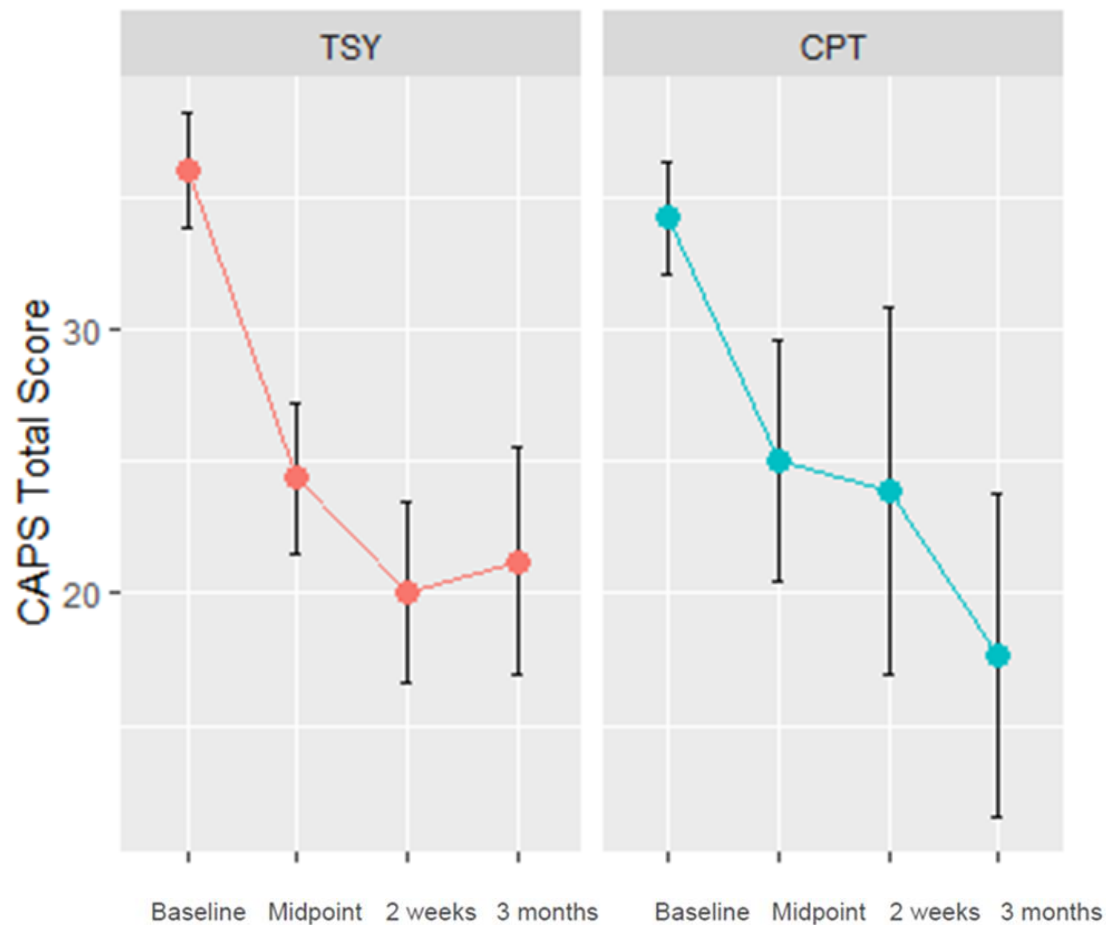
PCL Change Scores Over Time by Group (+/- 95% CI)



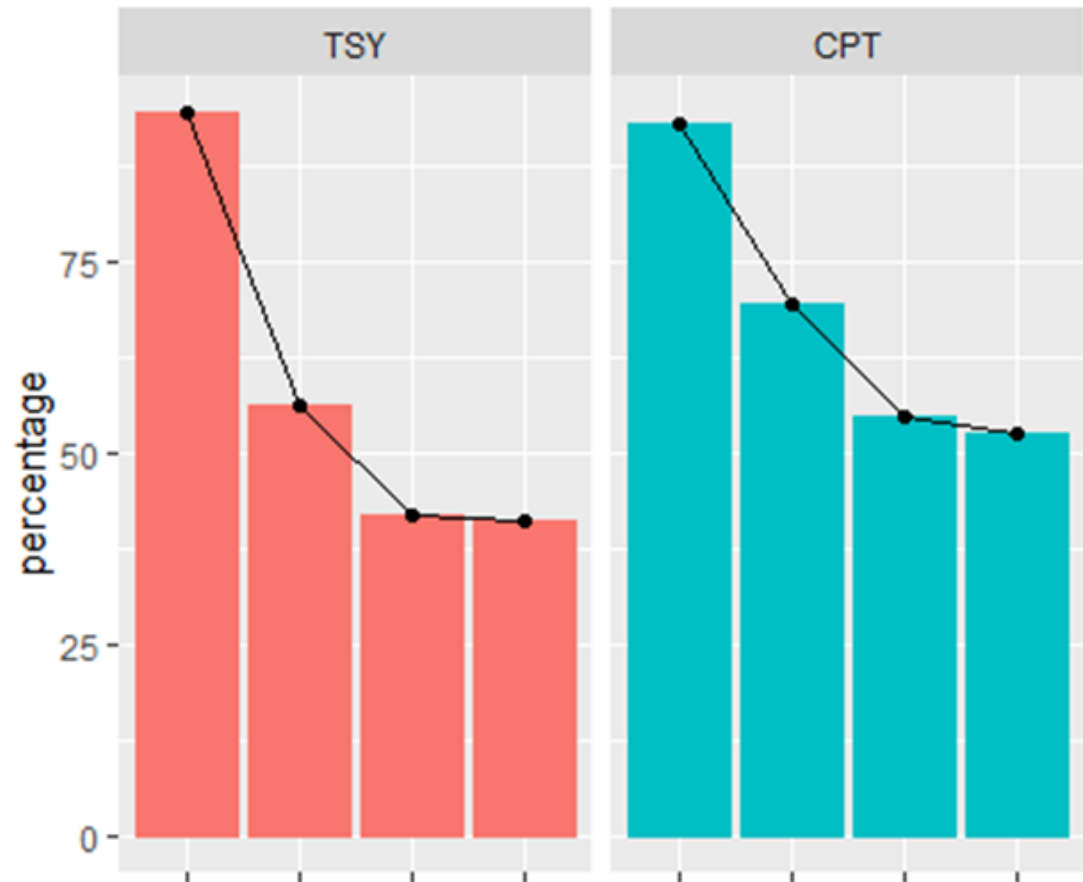
PTSD SYMPTOMS (CAPS-5) GROUP CHANGES OVER TIME



CAPS Total Score Over by Group (mean \pm 95% CI)



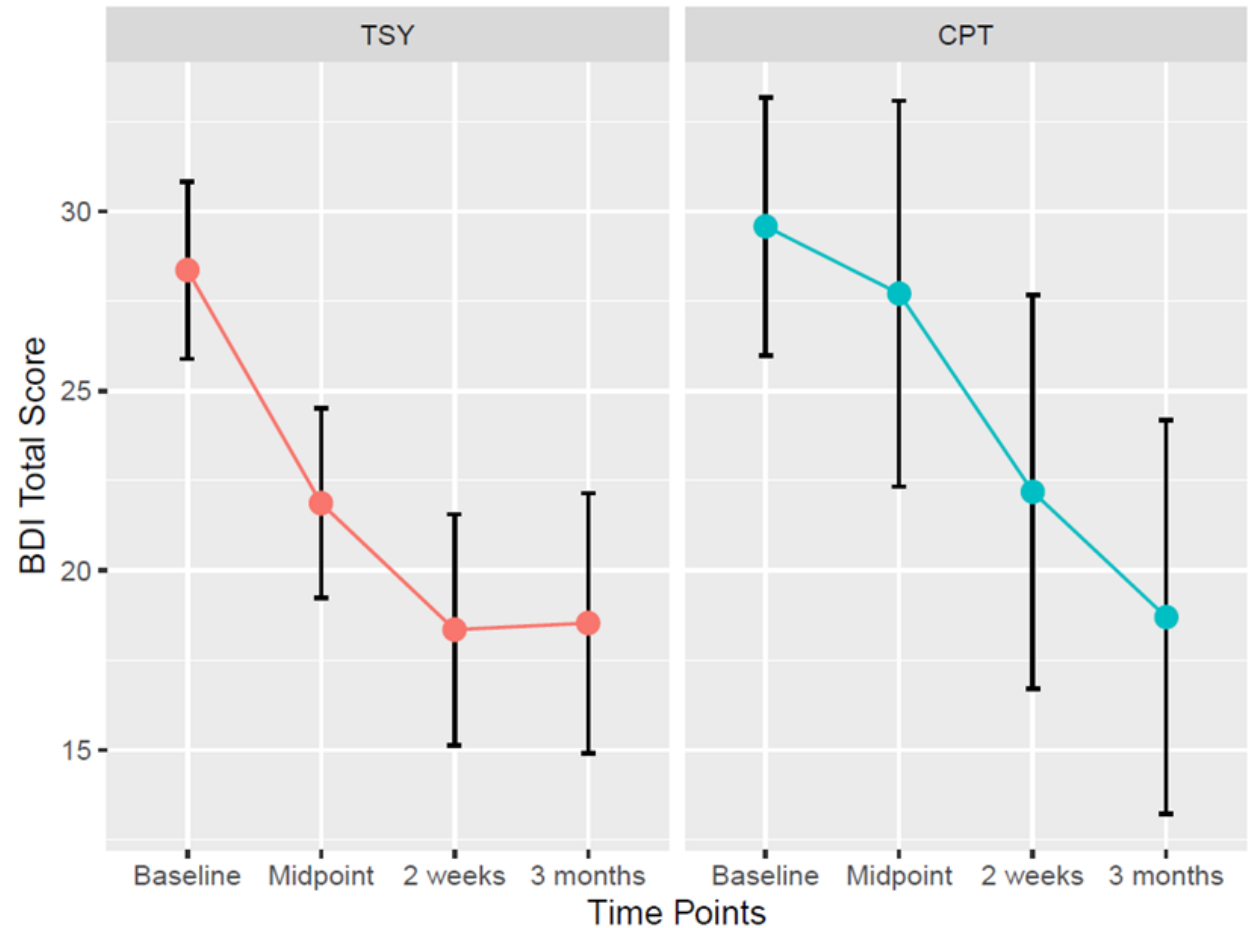
PERCENTAGE MEETING PTSD DIAGNOSTIC CRITERIA (CAPS-5) BY GROUP



RESULTS: DEPRESSION SYMPTOMS



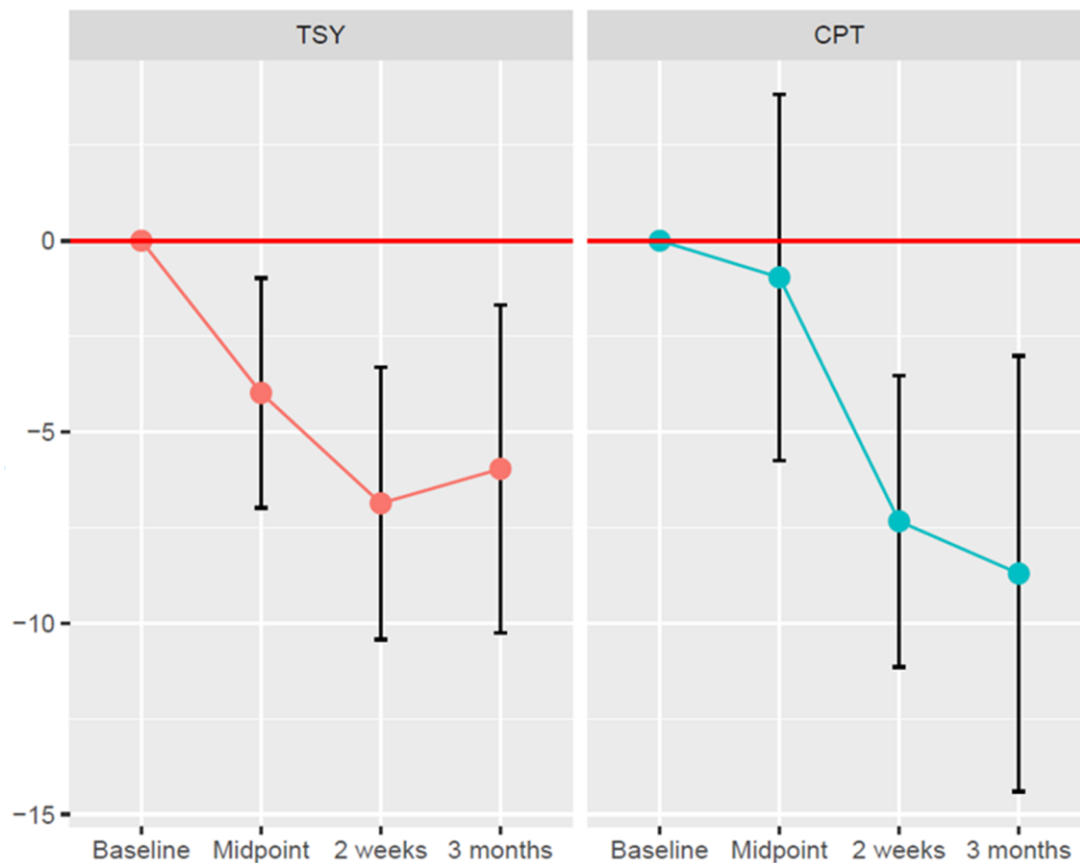
BDI Mean Scores by Group (+/- 95% CI)



RESULTS: DEPRESSION SYMPTOMS



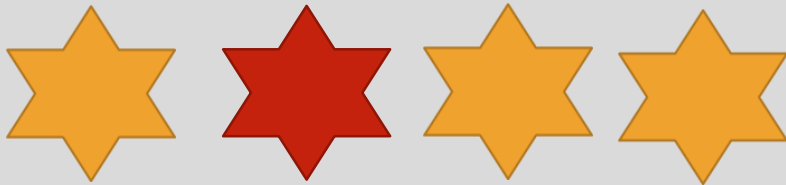
BDI Change Scores by Group (+/- 95% CI)



TREATMENT COMPLETION (ATL)

TCTSY: Attendance at $\geq 7/10$ sessions

CPT: Attendance at $\geq 8/12$ sessions



TCTSY: 60%

CPT: 38%



LIMITATIONS

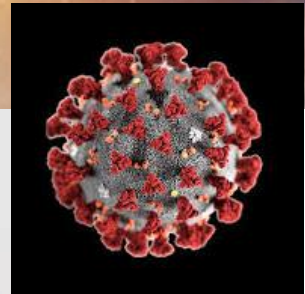
- Attrition in the study was high), similar to what we see in clinical practice.
- Neither intervention was effective for everyone.
- **The last Atlanta cohort and the PDX cohort occurred during the first few months of the COVID-10 pandemic and in the context of the political election, the racial justice movement, and unprecedented climate change events.**

2020-2021: A NATURAL STRESS-TEST



Beyond a Perfect Storm:

How Racism,
COVID-19, and
Economic Meltdown
Imperil Our
Mental Health



BLACK LIVES MATTER



DISCUSSION

- **TCTSY resulted in equivalent improvement in PTSD symptoms as CPT by 3-months post-intervention.**
 - Clinically significant
 - Statistically significant
 - Large effect sizes
- **TCTSY 22% higher treatment completion rate than CPT.**
- Symptom trajectories varied:
 - TCTSY had earlier symptom improvement than CPT, then levelled off.
 - CPT had slower symptom improvement that continued at all time points.
- **Co-occurring depression symptoms improved significantly in both groups.**

IMPLICATIONS: CLINICAL AND RESEARCH

- **TCTSY is equivalent in effectiveness to cognitively-based, trauma-focused treatment (CPT).**
 - Having an additional treatment option provides Veterans' more choice in treatments
 - May increase engage in treatment
 - Neither is sufficient for all individuals.
- **TCTSY effectiveness as a precursor or adjunct to CPT is unknown and warrants investigation.**
- **Implementation science is necessary to determine how to scale up TCTSY as an intervention within the VA.**

IMPLICATIONS: WHOLE HEALTH

- **Whole Health and the OPCC&CT are the national VA home for CIH modalities.**
- **Robust research is underway to evaluate WH implementation.**
- **Use of Whole Health CIH modalities varies widely across the VA in specificity for purpose and clinical problems.**
 - **Yoga for wellness, overall health, chronic pain, PTSD**
 - **Yoga: Hatha, “Warrior,” iREST, trauma-informed, TSY, TCTSY**
 - **Yoga commonly provided by clinicians as collateral duty or by volunteers**
 - **Yoga provision can be tracked by visits codes but not by type or purpose**

IMPLICATIONS: WHOLE HEALTH

- **Challenges to consider:**
 - **Local level administrative barriers, e.g. personnel hiring, space, technology, position descriptions**
 - **No such thing as a yoga teacher in VA! Hired as Rec Tx Assts.**
 - **Inconsistent use and lack of systemic evaluation of outcomes for specific modalities for specific conditions**
 - **WH/CIH approaches do not all have sufficient evidence and are not always acceptable to traditionally trained clinicians and scientists.**
 - **VA unwelcoming environment for women Veterans with PTSD related to MST**

IMPLICATIONS: WHOLE HEALTH

- Exemplar:
- VA Caribbean HCS using Whole Health funds and VA innovation grant to train 250 staff in foundations of TCTSY and 10 clinicians to become TCTSY facilitators as part of a trauma-informed care initiative.



TRAUMA CENTER
TRAUMA SENSITIVE YOGA
A PROGRAM OF THE CENTER FOR TRAUMA & EMBODIMENT AT JRI



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ADDITIONAL INFORMATION

- [Trauma Sensitive Yoga Equivalent to CPT as a Treatment for PTSD related to MST in Women Ve...](#)
- [Evidence Synthesis Program Reports \(va.gov\)](#)

Thank you!

Questions?

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